



Nursery Cooperative MANAGEMENT ALERT 2010 - 04

RECORD TEMPERATURE - JUNE 2010

This year, North Carolina set a record for the average air temperature in June. In fact, the eastern region of the South (AL, FL, GA, SC, NC and VA) experienced the second hottest June since 1895 (June, 1952 was 0.4° F hotter at 80.8° F). High temperature in June reached 102° F at Bennettsville, SC and 100° F at Goldsboro, NC.

Temperatures at the soil surface can be much higher and sometimes will exceed 120° F. Although this June was a warm one, the long-term record for this month shows no upward trend in average temperature.

High soil temperatures in the nursery can adversely affect the physiology of pine seedlings, especially in May when the stems are not lignified. McDonald (1984) says the killing temperature for a young hypocotyl is about 104° F (40° C). By June, July and August, stems have lignified and are more tolerant of heat but "heat lesions" (at or just above the soil surface) may occur on some species. Excessive heat can cause swellings at the ground-line. During hot spells, it can be important for nursery managers to reduce surface temperature with frequent light irrigation. Digital monitoring of soil temperature can be helpful, especially when coupled with an alarm system.

For more detailed information, see the following papers:

Barnard, E.L. 1990. Groundline heat lesions on tree seedlings. Fla. Dept. Agric. & Consumer Services Division of Plant Industry. Plant Pathology Circular No. 338. 2 p.

Helgerson, O.T. 1990. Heat damage in tree seedlings and its prevention. New Forests 3:333-358.

McDonald, S.E. 1984. Irrigation in forest-tree nurseries: monitoring and effects on seedling growth. P. 107-121. In Duryea, M.L. and T.D. Landis (eds.) Forest Nursery Manual. Martinus Nijhoff/Dr. W. Junk Publishers.

Average temperature in June (1901-2000) compared with the average for June 2010.

	1901-2000	2010	Hottest on Record	June Trend per Decade
Alabama	77.6	80.9	4th	-0.2 F
Arkansas	76.7	81.7	5th	0.0 F
Georgia	77.6	81.0	5th	-0.2 F
Louisiana	79.8	83.4	2nd	0.0 F
Mississippi	78.3	82.0	5th	-0.1 F
North Carolina	73.8	78.9	1st	0.0 F
Oklahoma	76.7	80.6	7th	0.0 F
South Carolina	77.0	81.4	2nd	-0.1 F
Tennessee	74.1	78.6	4th	-0.1 F
Texas	79.6	82.6	9th	0.0 F
Virginia	71.0	76.1	2nd	0.0 F
Cities				
Baton Rouge, LA	--	83.6	1st	--
Savannah, GA	--	83.3	1st	--
Roanoke, VA	--	78.2	1st	--
Little Rock, AR	--	84.9	2nd	--
Greenville, SC	--	80.6	2nd	--
Dallas, TX	--	86.9	2nd	--
Birmingham, AL	--	81.7	3rd	--
Jackson, TN	--	81.6	3rd	--